

A Review of Studies on Worksheets in Turkey

Selahattin Kaymakcı

Karadeniz Technical University, Trabzon, Turkey

Worksheet is one of the most important materials for achieving the goals of educational activities. However, worksheet can be considered as a new term for Turkish educational system, because related studies have only recently been reported. A review of literature indicated that there are some studies about implementation of worksheets in teaching-learning activities. It also revealed that there is not any study about the panorama and status of inquiries related to worksheets. In this context, the aim of this study is to examine Turkish educational sciences literature about worksheets. In total, 28 master theses and dissertations listed on Turkish Council of Higher Education Web page were reviewed through document analysis. Results of the study showed that majority of studies consist of master theses and they were done in the field of science education. Besides, studies generally focus on subject teaching and were done by using experimental method.

Keywords: worksheets, literature, master thesis, dissertation, Turkey

Introduction

Instructional materials play an important role in ensuring the effectiveness of teaching and learning activities. Worksheet is a kind of printed instructional material that is prepared and frequently used by teachers in order to help students to gain knowledge, skills and values by providing helpful comments about the course objectives and enabling students to engage in active learning and learning-by-doing in and out of the school (Kaymakcı, 2006, p. 5).

Worksheets have been used in educational activities for a long time. It can be claimed that using of worksheet in educational activities started after the invention of paper and writing. But, modern worksheets were started to be used in education with the invention of pen and pencil after the American Civil War (1861-1865) in order to support teaching and learning (Harmon & Jones, 2005, p. 160).

As far as Turkey and Turkish educational literature is concerned, worksheets can be considered as a new term. Indeed, worksheets were used in education until 1990s, but they were not called worksheets. They were called exercise notebooks (in Turkish “temrin defterleri”), tests, drawings, etc.. After the reorganization policies of education in Turkey in 1990s, scholars tended to explore and introduce contemporary educational technologies and materials to the public. So, during last two decades, the number of studies about worksheets has increased. However, the review of the related literature indicated that there is no review studies about worksheets in the Turkish educational sciences literature.

In this context, the aim of this study is to examine the Turkish educational sciences literature about worksheets. Three research questions are investigated:

- (1) What is the distribution of studies about worksheets in terms of types, preparation years, published

institutes, related subject areas and educational levels?

(2) Which subjects were handled in the studies?

(3) Which methods were used in the studies?

Methods

Research Design

This study was designed as a qualitative research study. As it is well known, qualitative research is the one that produces descriptive data, such as documents, interviews or observations (Bogdan & Biklen, 1998). Document analysis was used in this study. In line with the aim and research questions of this study, document analysis can show change and development about a topic, allows making an overview of a subject and provides an in-depth analysis of previous studies (Bowen, 2009; Merriam, 1998; Yin, 2003).

Data Sources

As data sources, the author used theses and dissertations, related to worksheets on the Turkish Council of Higher Education Web page. Also, the author prepared document analysis forms to classify the information and learn directly from the documents (Finnegan, 1996; Patton, 2002). In the form, there are three sub-topics toward research questions. First one covered types, subject areas, preparation years, published institutes, related subject areas and educational levels of documents. Second one included subjects and the last one covered methods of them. In order to enhance the validity, reliability and usability of the form, the author asked three educational sciences experts' opinions and then the author redesigned it.

Data Collection

The data were collected in the fall semester of 2010-2011 academic years. The author explored theses and dissertations on worksheets by using National Thesis Center/Database of Turkish Council of Higher Education. The author searched these Web pages: <http://www.yok.gov.tr>; <http://www.yok.gov.tr/en/content/blogcategory/205/46/>; and <http://www.yok.gov.tr/content/blogcategory/205/46/> with some keywords like “worksheet” and “worksheet in education”. Then, the author tried to download allowed theses and dissertations from these pages. But, for disallowed documents, the author tried a different method and asked the writers or advisors of documents to obtain them. The collection of documents took place between September 1, 2010 and October 24, 2010. All of the data were generated in Turkish by using the prepared document analysis form. Additionally, it was coded to identify each document by its numeric in digital forms (about the Information of Thesis and Dissertations Used in the Study, see Appendix).

Data Analysis

Content analysis was used as a data analysis technique, because it is “useful for analyzing in-depth qualitative data and is helpful for assessing events or processes in a society” (Berg, 1998). Not to cause any loss of meaning, the author analyzed all of the data in Turkish. The data and the themes were also transcribed and coded through emergent coding in this way (Haney, Russell, Gulek, & Fierros, 1998; as cited in Stemler, 2001).

In the data analysis procedure, the author prepared a list for each document. Then, the author determined the themes and presented them by using frequency and percentage tables. So, as to provide the validity and reliability, the author performed triangulation (Patton, 2002; Stemler, 2001). So, the data were reanalyzed by three other people who were working as educational sciences scholars. Then, we compared their analysis and the author's analysis and each of us concluded that there were no differences between the scholars' analysis and his analysis, so his analysis was valid for use.

Findings

Findings of this study are introduced as follows:

Table 1

Types of Documents

Types	<i>f</i>	Percentage (%)
Thesis	25	89.3
Dissertations	3	10.7

Table 1 shows the types of documents. As it can be seen in Table 1, majority of the documents (89.3%) are theses and the rest (10.7%) are dissertations.

Table 2

Preparation Years of Documents

Years	<i>f</i>	Percentage (%)
1995	1	3.6
2001	1	3.6
2002	2	7.1
2003	3	10.7
2004	2	7.1
2005	2	7.1
2006	2	7.1
2007	4	14.4
2008	6	21.5
2009	2	7.1
2010	3	10.7

Preparation years of documents are displayed in Table 2, in which 21.5% of documents were completed in 2008. Forty-four point four percent of them were prepared in 2007. Moreover, each of the 10.7% of the documents was written in 2003 and 2010. Each of the 7.1% of the documents was completed in 2002, 2004, 2005, 2006 and 2009. Also, 3.6% of the documents were prepared in 1995 and 2001.

Table 3

Published Institutes of Documents

Institutes	<i>f</i>	Percentage (%)
Karadeniz Technical University	7	25
Gazi University	4	14.4
Ataturk University	3	10.7
Balıkesir University	3	10.7
Dokuz Eylul University	3	10.7
Afyon Kocatepe University	1	3.6
Celal Bayar University	1	3.6
Cukurova University	1	3.6
Erciyes University	1	3.6
Hacettepe University	1	3.6
Marmara University	1	3.6
Middle East Technical University	1	3.6
Sakarya University	1	3.6

Table 3 shows publishing institutes of documents. As it can be seen in Table 3, Karadeniz Technical

University has 25% of the documents, Gazi University has 14.4%, Atatürk, Balıkesir and Dokuz Eylül University each have 10.7% of the documents. And each the rest of all universities (Afyon Kocatepe, Celal Bayar, Cukurova, Erciyes, Hacettepe, Marmara, Middle East Technical and Sakarya University) has 3.6% of the documents.

Table 4

Related Subject Areas of Documents

Subject areas	<i>f</i>	Percentage (%)
Science education	24	85.6
Social science education	4	14.4

Related subjects areas of documents are displayed in Table 4. According to this, majority of the documents (85.6%) are related to science education and the rest (14.4%) are prepared on social science education.

Table 5

Related Educational Level of Documents

Educational levels	<i>f</i>	Percentage (%)
Primary education	14	50
Secondary education	12	42.9
Higher education	2	7.1

Table 5 shows related educational levels of documents. In Table 5, documents on primary education (50%) are more than those on secondary education (42.9%) and higher education (7.1%).

Table 6

Subjects of Documents

Subjects	<i>f</i>	Percentage (%)
Subject teaching	18	64.3
Concept teaching	4	14.4
Using status of worksheet	2	7.1
Experiment teaching	2	7.1
Problem-solving skill	2	7.1

Subjects of documents are displayed in Table 6, in which themes of subject teaching (64.3%), concept teaching (14.4%), using status of worksheet (7.1%), experiment teaching (7.1%) and problem-solving skills (7.1%) are the subjects of documents.

Subject teaching is the most studied topic on the documents. Under this topic, some science and social sciences subjects, such as enzymes, electricity, pressure, statistic and graphics, angle and polygons, functions, adverbs, and Gallipoli Wars were included. For the concept of teaching subjects, the research was on how to teach some concepts like acid and base and momentum and acceleration. Concerning the status of worksheet subjects, both of these studies were done by social sciences scholars. These researchers investigated what the theoretical information and attitudes of teachers are about worksheets and how they prepare and use worksheets in their classes. Regarding the experiment teaching subject, related studies were done by science education scholars to display the stages of an experiment and evaluate the results of an experiment. For the problem-solving skill subject, there are two documents and the aim is to develop students' problem-solving

skills by using active learning and algebraic information based on worksheets.

Table 7

Methods of Documents

Methods	<i>f</i>	Percentage (%)
Experimental method	17	60.7
Descriptive method	6	21.5
Mixed method	5	17.8

Table 7 shows the methods of the documents. As it can be seen in Table 7, 60.7% of the scholars used experimental method, 21.5% employed descriptive method and 17.8% engaged mixed method in their studies.

Discussion and Conclusions

Worksheets are practical, useful and economic materials to use in educational activities. Worksheets have been used in educational activities for centuries. Regarding Turkish educational system, worksheet is a new topic and subject area for scholars to explore. As it can be seen in many other educational subjects, worksheets entered Turkish educational system after the reorganization policies of national education in 1990s. At this point, number of studies on worksheets started to increase during 1990s.

Review of literature by using Turkish Council of Higher Education database shows that there are 28 master theses/dissertations about worksheets. Findings showed that majority of these studies consist of master theses and preparation years were mostly concentrated to this decade. Thus, it can be said that worksheets are good examples for understanding the transformation of Turkish educational system. Furthermore, worksheets can be considered as one of the recent subject areas, and the number of related studies increased after 2001.

In light of the data, it is understood that in total, 13 universities have published studies on worksheets and Karadeniz Technical University is the most productive institute among them. So, it can be claimed that Karadeniz Technical University is the scientific pioneer of studies on worksheets in Turkey and this may be due to Karadeniz Technical University scholars' or advisors' research interests, demands, needs and research agenda.

Data indicate that majority of the studies (24) reflect the implementations of worksheets in science education. However, three of the studies are related to social sciences education. From this point of view, it can be said that the results reflect the perception of educational sciences in Turkey. Specifically, the importance of social sciences education was understood much later than the importance of science education in Turkey. Thus, researches on science education started too early contrary to social sciences education and science education scholars have done more studies than social sciences education scholars almost every areas of educational subjects. In addition, social sciences education might have had some deficiencies about conducting these kinds of studies and this might have been due to the late development of social sciences education as compared with science education in Turkey.

From findings, it can be seen that except for two studies, in total, 26 studies were done about using worksheets in primary and secondary education. This may be due to some practical anxieties like numbers of universe and sample, requirements of investigating primary and secondary education curricula and their problems, etc.. Also, it can be claimed that in Turkish context, university education is perceived as a theoretical

education, but primary and secondary education as a practical one. Universities may have tried to determine and solve the practical problems of the education at these levels.

The data also showed that studies on worksheets have subject richness and the most used subject is subject teaching. Moreover, concept teaching, using status of worksheet, experiment teaching and problem-solving skills are the other subjects investigated. However, except for problem-solving skills, there is no specific study about teaching values, skills with worksheets. So, it can be said that, studies on worksheets focused on knowledge and information and ignored other important components of education like values and skills in terms of subjects.

From the findings, it is appeared that experimental method is the most used method in these studies. Descriptive and mixed methods are the other used methods. Comparing the data related to subjects and methods, it is noteworthy that methods used in studies are related to subjects. Majority of scholars used experimental method to teach a subject or concept and showed whether their worksheets are useful or not in increasing students' academic achievement and skills. Also, it can be said that scholars employed descriptive studies for a wide field of research subjects and took students' or teachers' opinions about worksheets. Furthermore, it is possible to say that scholars used mixed method for studying a subject from different perspectives and examining academic achievement, attitudes and skills with more and in-depth analysis.

Limitations

There are some limitations of this study. The first limitation is related to the subject of this study. As the author stressed above, worksheet is a new subject area for Turkish educational sciences. So, there are limited sources to explore. The other limitation is about the data collection procedure. In this case, it should be noted that this study is limited with available digital and written sources. So, the author might not have reached all of the sources about this topic.

Recommendations

The present study showed that there are some studies including master theses and dissertations on worksheets in Turkish educational sciences literature. As a conclusion of this study, studies on worksheets should be increased in terms of quality and quantity. Also, studies at doctoral level should be enhanced and further studies should study worksheets from different aspects. Social sciences educators should do more studies about worksheets and their implementations in social sciences education. Skills and value-based worksheets should be prepared as many as information-based worksheets. In addition, studies related to using status and using problems of worksheets should be examined with a wider scale descriptive studies.

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Appendix: Used Documents in the Study

Master Thesis

- Bayrak, N. (2008). Examining of the effect on students' success, the lasting of data and attitudes towards science of course software and worksheets developed according to five gradual model of constructivist learning approach (Unpublished master's thesis, Atatürk University Graduate School of Natural and Applied Sciences).
- Besler, B. (2009). To the students' success the effect of worksheets prepared suitable for the constructivist approach in 8th grade mathematics at teaching of possibility and permutation (Unpublished master's thesis, Gazi University Graduate School of Educational Sciences).
- Bozdoğan, A. (2007). The effects of worksheets on the logical thinking abilities on the education of science lessons (Unpublished master's thesis, Cukurova University Graduate School of Social Sciences).
- Burhan, Y. (2008). Developing worksheets enriched by concept cartoons concerning the acid-base concepts (Unpublished master's thesis, Karadeniz Technical University Graduate School of Natural and Applied Sciences).
- Çınkı, A. (2007). The effect of vee-diagrams and worksheets on sixth grade primary school students' achievements in science experiments (Unpublished master's thesis, Balıkesir University Graduate School of Natural and Applied Sciences).
- Ev, E. (2003). Using of worksheets in primary math teaching and the effect of pupils' achievement and pupils' and teachers' views of the lesson (Unpublished master's thesis, Dokuz Eylül University Graduate School of Educational Sciences).
- Güler, M. H. (2002). The effects of the computer aided instruction and worksheets on the students' biology achievement and their attitudes toward computer (Unpublished master's thesis, Hacettepe University Graduate School of Natural and Applied Sciences).
- Karagöl, E. (2004). The development of worksheets related to constructivist view of learning whose aim is to remove the misconceptions on velocity and acceleration (Unpublished master's thesis, Karadeniz Technical University Graduate School of Natural and Applied Sciences).
- Kaş, S. (2010). The effects of teaching with worksheets on the eighth grades students' algebraic thinking and problem solving skills. (Unpublished master's thesis, Marmara University Graduate School of Educational Sciences).
- Kaymakçı, S. (2006). History teachers' views about worksheets (Unpublished master's thesis, Karadeniz Technical University Graduate School of Social Sciences).
- Korkmaz, G. (2007). The usage of worksheets by religious culture and moral knowledge teachers at the second grade of the primary schools (Kayseri sample) (Unpublished master's thesis, Erciyes University Graduate School of Social Sciences).
- Kurt, Ş. (2002). Worksheets development according to constructivist view of learning in physics teaching (Unpublished master's thesis, Karadeniz Technical University Graduate School of Natural and Applied Sciences).
- Özdemir, Ö. (2006). The effect of instruction the life event which enables continuity of species (reproduction) subject through worksheets on primary school eighth grade students' achievement and retention (Unpublished master's thesis, Dokuz Eylül University Graduate School of Educational Sciences).
- Özdoğan, G. (2005). Developing worksheets based on constructivism in mathematics education (Unpublished master's thesis, Gazi University Graduate School of Educational Sciences).
- Özkan, Y. (2008). Effects of the instruction materials prepared according to the constructivist learning approach in physics course on the student's achievement (Unpublished master's thesis, Dokuz Eylül University Graduate School of Educational Sciences).
- Saka, A. (2001). Developing teacher guide materials for the unit of nervous and endocrine systems (Unpublished master's thesis, Karadeniz Technical University Graduate School of Natural and Applied Sciences).
- Sambur, E. (2009). The effect of worksheets on standard of attainments and the attitude of the students' "water analysis" in new science curriculum (Unpublished master's thesis, Celal Bayar Graduate School of Natural and Applied Sciences).
- Sarıkaya, A. (2003). Evaluating the IX. class physics experiments according to the teachers' views and preparing v-diagrams and worksheets for the selected experiments (Unpublished master's thesis, Balıkesir University Graduate School of Natural and Applied Sciences).

Applied Sciences).

- Şen, A. (2008). The effect of active learning problem sheets on secondary school students' problem solving ability (Unpublished master's thesis, Afyon Kocatepe University Graduate School of Social Sciences).
- Seymen, N. (2003). Development of worksheets on electric and electrolysis contents (Unpublished master's thesis, Karadeniz Technical University Graduate School of Natural and Applied Sciences).
- Şişman, M. (2007). The effect to students' success that the teaching of subject in factorization and identity in according to constructivist approach in mathematics lessons of 8th classes of elementary school (Unpublished master's thesis, Gazi University Graduate School of Educational Sciences).
- Tan, E. (2008). The effects of worksheets prepared on the basis of constructive approach about the subject of adverbs which is taught in primary school grade seven classes on student achievement (Unpublished master's thesis, Atatürk University Graduate School of Social Sciences).
- Yağdıran, E. (2005). Teaching functions in the 9th grade maths class of a secondary school with worksheets, vee diagrams and concept maps (Unpublished master's thesis, Balıkesir University Graduate School of Natural and Applied Sciences).
- Yıldırım, S. (1995). Effects of computer assisted instruction and worksheet study on students' chemistry achievement and attitudes toward chemistry at high school level (Unpublished master's thesis, METU Graduate School of Education Faculty).
- Yılmaz, M. (2004). Improving and applying teaching material depend on worksheet in physics teaching supported with computer. (Unpublished master's thesis, Sakarya University Graduate School of Social Sciences).

Dissertations

- Atasoy, Ş. (2008). Researching effectiveness of worksheets developed to remedying student teachers' misconceptions about newton's laws of motion (Unpublished dissertation, Karadeniz Technical University Graduate School of Natural and Applied Sciences).
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